REMARKS

We have carefully considered the Office Action dated May 18, 2006, in which all claims are rejected as anticipated by either United States Patent 7,031,090 to Ichihara et al. or an article by Hagenauer et al. We have amended the independent claims to more particularly point out the current invention of which decodes **non-binary symbols utilizing a binary trellis with a traceback window that is sized based on the number of bits in a symbol and the channel convergence**, as set forth in independent claims 1, 17, 19, and 35, as amended, and the claims that depend therefrom. Neither of the cited references shows this feature of the invention. Further, neither of the cited references shows the feature of **using a hard decision Viterbi detector to provide most likely path information to a SOVA detector**, and in particular, to a SOVA detector that determines soft values for non-binary symbols, as set forth in independent claims 34, 35 and 39, as amended.

The Ichihara reference teaches decoding bits using a window that is sized to noise characteristics of the channel. See, Column 2, lines 58 et seq.; Column 19, lines 5 et seq.; also Figs. 13, 20. The window used in the Ichihara system also looks both backward and forward, where the window in the current system looks backward only. There is thus no showing, teaching or suggestion that the sliding window utilized in Ichihara is sized based on a number of bits in a non-binary symbol and the channel convergence. Accordingly, Ichihara does not anticipate, teach or suggest the current invention of the independent claims, as amended. Indeed, there is no showing, teaching or suggestion in Ichihara of a SOVA detector that produces symbol-level soft values.

The Hagenauer article describes a detector that essentially determines all possible values for the bits, or binary "symbols," of a code word. See, Fig. 3 and pages 438-439 ("The output of the 'symbol-by-symbol' maximum a posteriori (MAP) decoder is defined as the a posteriori log-likelihood ratio for a transmitted '+1' and a transmitted '-1' in the information sequence."). Accordingly, the trellis used in Hagenauer is not a binary trel-

lis. Further, there is no teaching or suggestion of utilizing a traceback window that is sized based on the number of bits in a non-binary symbol and the channel convergence. Accordingly, Hagenauer does not anticipate, teach or suggest the current invention as set forth in the independent claims, as amended.

The Ichihara and Hagenauer also do not show the use of a hard decision Viterbi detector to provide most likely path information to a SOVA detector and, in particular, to a symbol-level SOVA detector as set forth in independent claims 34, 35 and 39. As discussed in the application beginning at page 11, line 13, there are distinct advantages in such a system. The advantages are not found in either cited reference, as neither reference shows the use of the output of a hard decision Viterbi detector to determine the most likely path for a SOVA detector. Accordingly, neither reference teaches the invention as set forth in independent claims 34, 35 and 39.

We do not specifically address the rejection of the dependent claims. This should not be construed as acquiescence to the rejection, but as recognition that the rejection is moot based on our remarks regarding the allowability of the independent claims, as amended.

In light of the above, we ask that the Examiner reconsider the rejection and issue a Notice of Allowance for all pending claims, as amended.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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